REMARKS

Claims 1 and 4 have been amended to more clearly describe the invention.

The disclosure is objected to because of informalities. Specifically, the Examiner states that the terms "posterior", "sigmoid", "spatial" and "probability" in the claim language are indefinite and unclear. These terms as used in the application are well known at least in the art of mathematics/probability or artificial intelligence, as shown in the enclosed sample publications obtained readily from the Internet in a search using some of the terms in issue. Thus, applicants respectfully submit that it is improper for the Examiner to interpret these terms according to dictionary definitions which may be inconsistent with the way in which these terms are used in the art. Moreover, Applicants respectfully submit that requiring them to change the claim terms as interpreted or preferred by the Examiner is also improper (e.g. requiring that "posterior probability" be changed to "backward probability" or that "spatial target probability" be changed to "space target probability"). Withdrawal of the objections to the specification is respectfully requested.

Claims 41 and 42 stand objected under 37 CFR 1.75(c) as being in improper dependent form. Claim 42, as shown above, has been amended to overcome this objection. Withdrawal of the objection is respectfully requested.

Claims 1-4, 6-8, 13-19 and 25-50 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicants respectfully traverse this rejection.

The Examiner states that the terms "posterior probability" and "sigmoid curve" are indefinite. As shown in the attached publications, these terms are well known

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in the field of mathematics and probability, and would not be indefinite to one of ordinary skill in the art.

Moreover, the term "spatial target probability" and the term "approximating a posterior probability" are also not indefinite as asserted in the Office Action. As these terms are also well known at least in the field of mathematics/probability, they should not be used in a manner which is inconsistent with the usage in the art. Certainly, an interpretation of the term "posterior" as meaning the "caudal buttocks of a mammal" would be inconsistent usage. To the extent that "back or behind probability" or "back-propagation" are inconsistent with the claimed terminology, they also are improper usages of the claimed terms.

Applicants also submit that the term "desired environment" is not indefinite as asserted in the Office Action. To require Applicants to specifically describe the "desired environment" in the claims forces Applicants to narrow the scope of the claims and deprives them of their right to claim their invention as broadly permissible under the law. For these reasons, Applicants respectfully request withdrawal of the section 112, second paragraph rejection.

Claims 1-4, 6-8, 13-19 and 25-50 stand rejected under 35 U.S.C. §102(a) as being anticipated by Seguin. Applicants respectfully traverse this rejection.

The present invention relates to an apparatus and methods for determining spatial target probability or the probability of locating a target in an environment. This is accomplished using model units in a map corresponding to the locations in the environment and approximating a conditional probability of a target, as described in

claim 1, using supervised learning algorithm or an unsupervised adaptive algorithm in a model of neural network, as described in independent claims 13 and 29, or using a controller with a program modeling a neural network of a brain, as in independent claim 15.

The Seguin reference relates to modeling of neurons in the superior colliculus of mammalian midbrain. Four different models of superior colliculus neurons are disclosed in Seguin, as described on page 93 and in the abstract. Seguin, however, does not disclose or suggest using these models of a neural network for determining spatial target probability, as in the present invention. While Seguin may disclose various different models of the brain, the present invention uses a model of the superior colliculus to determine the location of a target in a desired environment. In other words, the Seguin reference merely discloses types of models of the superior colliculus, it does not go further in teaching the use of these models to determine spatial target probability as in the present invention. For example, nowhere does Seguin disclose or suggest the claimed features of applying inputs to a plurality of model units in a map corresponding to a plurality of locations in the environment, or approximating a conditional or posterior probability of a first target at each of the model units based on the two inputs.

With respect to claim 15, it is directed to an apparatus for tracking a target which includes particular components such as a sensor for receiving sensory inputs, a controller for locating the target in the environment, a directional sensor for tuning to a location, etc. None of these parts that are called for in claim 15 are disclosed or suggested in Seguin.

Applicants respectfully submit that a claim is anticipated only if each and every element as set forth in the claim is found in a single prior art reference. While Seguin may teach various manners in which the superior culliculus is modeled, it does not, however, disclose or suggest using models of a neural network to determine the spatial target probability or automatically tracking a target in a desired environment, as specifically recited in independent claims 1, 13, 15 and 29 of the present application. For these reasons, claims 1, 13, 15 and 29 are allowable over Seguin.

The remaining claims 2-4, 6-8, 14, 16-19, 25-28 and 30-50 depend either directly or indirectly from independent claims 1, 13, 15 or 29, and are also allowable for the same reasons given for their respective independent claims.

For all the above reasons, Applicants request reconsideration and allowance of the claimed invention. The Examiner should contact Applicants' undersigned attorney if a telephone conference would expedite prosecution.

Respectfully submitted,

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March 1, 2004

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